have been extensively studied, one example being the adhesions of *Escherichia coli* and gonococcal pili, as befits the medical significance of these bacteria. For others we are presented with more modest but just as intriguing studies, as in the case of lectin-like substances from nitrogen-fixing bacteria. Wisely, Mirelman has included systems in which the strict definition of lectins may not in fact be met, such as sugar-binding bacterial toxins. A novel and surely beneficial feature of the chapter on lectins from the protozoan *Entamoeba histolytica* is the joint authorship by individuals (one of them the editor) who have apparently worked independently, which shifts the burden of explaining inconsistencies from the reader to the experimenters themselves.

Those of us who study lectins can take heart in the material presented here. Not only are we provided with appropriate data, we are allowed to see the frustrations that confront investigators in this area. We learn that, under physiologic conditions, certain lectins from slime molds may bind to phospholipids rather than to the sugars with which they react in more conventional laboratory conditions and that a substance derived from the etiologic agent of cholera may achieve hemagglutination by proteolysis rather than by its lectin-like activity. Indeed, a recurring theme in this book is that, if lectins do play a role in establishing or maintaining a physiologic or pathologic association involving microorganisms, they do so in concert with other mechanisms, and not alone.

In general, the chapters are well written and extensively referenced. An unfortunate exception is the chapter on the protozoan *Giardia lamblia*, which seems particularly plagued with editorial problems. Throughout the book there is a problem with incomplete or inappropriate figure legends: the autoradiograph on p. 161 and the accompanying legend are incompatible. On a more conceptual level, I was surprised that some contributors apparently overlooked the possibility that the cells interacting with microorganisms may themselves bear lectins, thereby contributing to the associative process.

The inherent interest of the material, the unique compilation of topics, the general format, and the fact that a significant amount of the information presented has not been previously published are all factors that make this volume worthwhile reading for anyone interested in the mechanisms of microbial adherence and its consequences.

T. G. PISTOLE
Department of Microbiology, University of New Hampshire, Durham, NH 03824

Solar Physics

Progress in Solar Physics. Review Papers Invited to Celebrate the Centennial Volume of *Solar Physics*. C. DE JAGER and Z. ŠVESTKA, Eds. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). xii, 621 pp., illus. $99.50. Reprinted from *Solar Physics*, vol. 100, nos. 1–2.

Plans for a new journal to be entitled *Solar Physics* were initiated in 1965 with Cornelis de Jager (Utrecht) as the founding editor. De Jager was joined early in the endeavor by Zdeněk Švestka, and the two have served as coeditors of the journal since its first issue appeared in early 1967. The journal enjoyed explosive growth in its early years and is now a monthly publication, presenting over 200 articles a year in some 2000 pages.

Progress in Solar Physics reprints a collection of review papers commissioned for the 100th volume of the journal. The collection includes 30 contributions by 31 contributors—16 from the United States, three from the Netherlands, two each from the Soviet Union, England, and the Federal Republic of Germany, and one each from France, Denmark, Japan, Italy, Switzerland, and Czechoslovakia.

The subjects treated encompass solar interior processes (oscillations, dynamo, convection), chromospheric and coronal physics, prominences, flares, solar rotation, stellar activity and analogs, radio observations, solar wind and interplanetary observations, high-resolution observations, and future directions of the discipline. Thus, virtually all aspects of solar studies, both observational and theoretical, are represented.

As might be expected with such a collection, the contributions are uneven. Three papers, by Roxburgh, Bahcall, and Gough, explore solar interior oscillations and neutrino generation in some detail. Together they offer the reader an excellent overview, with appropriate quantitative backing, of this important subject. A paper by Nordlund is a superior description, in physical terms, of solar convection. However, the paper by Ruzmaikin on the solar dynamo is brief to a fault and, in addition to placing excessive mathematical emphasis on the nonlinear nature of equations, hardly represents the body of effort in this area broadly, or well. Fortunately, Belevedere compensates for this lack with a good survey of dynamo theory in the context of solar and stellar activity. Some of the unevenness arises from differences in the intended breadth of reviews, as evidenced by the contrast between titles such as "The solar wind" and "Imaging of coronal mass ejections by the Helios spacecraft." Additional unevenness results from inevitable differences in authors' treatment of their subjects; for example, contrast the contribution by Zirker entitled "Progress in coronal physics"—actually only a brief outline of the subject area—with the aforementioned effort by Nordlund.

On the other hand, this unevenness results in a pleasant mixture of research surveys and retrospective summaries with a dash of detail about current efforts. Howard offers a look at eight decades of research at the Mount Wilson solar observatory; Dunn surveys the problems and current efforts in the development of high-resolution solar telescopes; and Parker closes the volume with a ringing advocacy of the study of physical processes on, in, and around the sun within the context of progress in stellar physics.

Is the volume worthwhile? Emphatically, yes. The contributions are less deep and uniformly broad than those included in the recent massive survey *Physics of the Sun*, edited by Sturrock and also published by Reidel (in three volumes), but they are no less valuable, for *Progress in Solar Physics* provides a more recent, fresh mixture of efforts—current and past—in the broad field of solar science. With its diverse approach, the present work will be useful to both the specialist and the interested observer.

R. M. MACQUEEN
High Altitude Observatory, National Center for Atmospheric Research, Boulder, CO 80307

Riverine Mammals

Otters. Ecology and Conservation. C. F. MASON and S. M. MACDONALD. Cambridge University Press, New York, 1986. viii, 236 pp., illus. $34.50.

Mason and Macdonald have written an authoritative and readable book on otters that is the best available general account of the group. It will be a useful source to all who are interested in these poorly known animals.

The title suggests a comprehensive treatment of various otter species, but the book actually is devoted largely to European otters, *Lutra lutra*. Three-quarters of the text specifically concerns this species, and only in the final chapter are the other 12 or so species discussed. This imbalance probably reflects the authors' history of research and personal involvement with European otters, as well as their apparent concern for the species' shrinking range, dwindling numbers, and bleak future, rather than a disparity of available information about different otter species.